Aug. 29, 1967 J. M. RENTFROW 3,337,899

ROLLER TYPE PAINT DISPENSER

Filed Aug. 16, 1965

Fig. 3

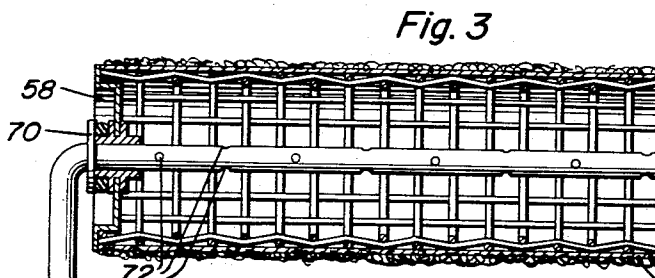


Fig. 5

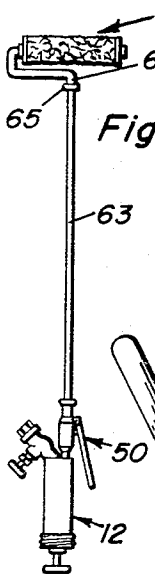
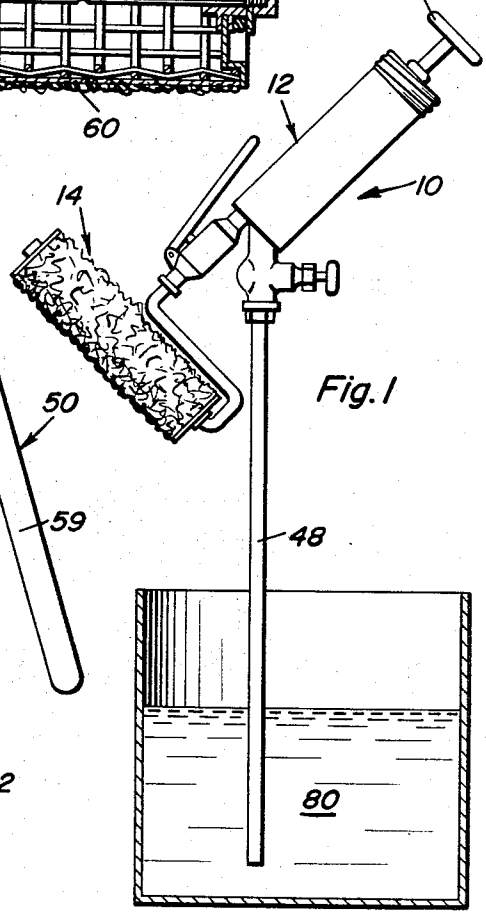


Fig. 1



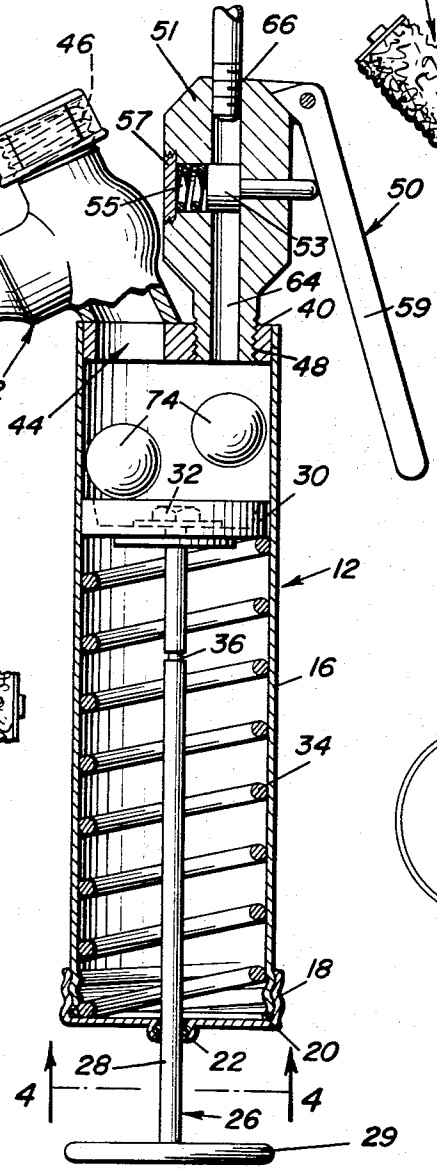
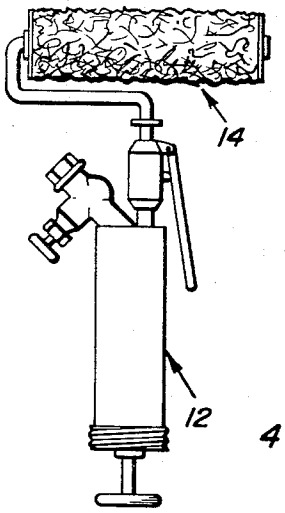


Fig. 2



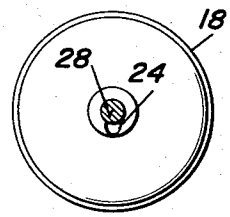


Fig. 4

James M. Rentfrow
INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

United States Patent Office 3,337,899
Patented Aug. 29, 1967

3,337,899

ROLLER TYPE PAINT DISPENSER

James M. Rentfrow, Odessa, Tex.
(8923 Santa Clara, Dallas, Tex. 75218)

Filed Aug. 16, 1965, Ser. No. 479,886
7 Claims. (Cl. 15—510)

This invention relates generally to paint applicators and more particularly to a roller type paint applicator which is provided with an integral paint reservoir.

It is a primary object of this invention to provide a novel construction for a pressure operated roller type paint dispenser which is provided with a self-container paint reservoir and a hand operated spring biased paint pressurizing pump to force the paint in the pressurized paint reservoir into the interior of a roller type paint applicator which is integral therewith.

Another object of this invention is to provide a roller type paint dispenser or applicator which is provided with a simplified means for filling and cleaning the dispenser.

A further object of this invention is to provide a roller type paint dispenser provided with means to evenly distribute paint to the interior of a paint applicator roller integral therewith.

Still another object of this invention is to provide a roller type paint dispenser which is provided with means to stir the paint within the reservoir of the device in response to normal motion of the device when applying paint to a surface.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a top plan view of the device of the present invention wherein the paint reservoir of the device is being filled from a paint can;

FIGURE 2 is a top plan view of the device of FIGURE 1 wherein a portion of the reservoir filling means has been removed;

FIGURE 3 is an enlarged horizontal sectional view of the device of the present invention with portions thereof shown in vertical section;

FIGURE 4 is a sectional end view of the device of the present invention taken substantially on the plane of the line 4—4 of FIGURE 3; and

FIGURE 5 is a top plan view of the device of the present invention wherein the device has been provided with an extension tube to facilitate the painting of ceilings, for example.

Referring now to the drawings and FIGURE 3 in particular, the roller-type paint dispenser comprising the present invention is indicated generally at **10** and includes a paint reservoir and support means indicated generally at **12** and a roller-type paint applicator means indicated generally at **14**.

The paint reservoir and supply means **12** includes a generally cylindrical reservoir **16**. The cylindrical body **16** is provided with a threadably or otherwise removably secured end cap **18** which is provided with a resilient sealing ring **20**. The end cap **18** is further provided with a centrally disposed boss **22** provided with a suitable T-slot aperture **24** therein within which is slidably received and selectively lockable a piston plunger means indicated generally at **26**.

The piston plunger means **26** includes a longitudinally disposed shaft **28** provided with a manipulating handle **29**, externally of the cylindrical member **16**, and a resilient piston **30** secured to the shaft **28** on the inwardly projecting end thereof by means of a threadably secured nut

32. The piston **30** is preferably formed of a resilient relatively inert material such as neoprene, for example, and is sized so as to swab the interior surface of the cylindrical body **16** in sealing relationship thereto. The piston **30** is biased into the position shown in FIGURE 3 by means of a cylindrical helical spring **34** or the like which may be placed in compression by wtihdrawing the shaft **28** rearwardly and locking the shaft in the keyhole slot **24** provided in the cover **18** by means of an annular groove **36** provided in the shaft **28**.

The cylindrical body **16** is further provided with a rigidly secured or integrally formed end wall **40**. A manually operable valve means **42** is rigidly secured to the end wall **40** in alignment with an aperture **44** therethrough by means of welding, for example. The valve means **42** is a globe-type valve or the like which is preferably provided with suitable threads such as indicated at **46** adapted to threadably receive a filling tube **48**. The threads **46** are preferably of a type utilized on a conventional garden hose coupling, for reasons which will become clear.

The end wall **40** of the reservoir and supply means **12** is further provided with a suitable threaded aperture **48** which is adapted to threadably receive a hand operated spring biased valve means **50**.

The roller type paint applicator means **14** includes a cylindrical wire mesh roller **54** provided with imperforate end members **56** and **58** which are frictionally retained in assembled relationship to the wire mesh roller **54** by virtue of the fact that they are press fit into the inner diameter of the roller. Alternately, the end caps **56** and **58** could be secured to the wire mesh roller by means of brazing or welding, for example. The wire mesh roller **54** is covered with a suitable permeable fabric sleeve **60** or the like which is frictionally or otherwise retained on the roller **54** by means of drawstring or the like, not shown, provided in the fabric sleeve.

The end caps **56** and **58** of the roller **54** are rotatably supported upon a conduit **62** one end of which is threadably but removably secured to the bore **64** of the valve means **50** such as at **66**.

The conduit **62** preferably extends for a distance straight out from the reservoir and supply means **12** and is longitudinally disposed thereto. The conduit **62** then projects laterally and forwardly and is then curved back upon itself to form a support for the roller **54** whereby the roller **54** is preferably at right angles to the cylindrical body **16** of the reservoir and supply means **12**. The roller **54** is rotatably secured to the conduit **62** by means of an end cap **68** threadably received on the end of the conduit **62** in sealing relation to the bore of the conduit **62**. The roller **54** is prevented from sliding with respect to the conduit **62** by means of a stop **70** secured to the outer diameter of the conduit **62** by means of brazing or welding, for example.

As seen best in FIGURE 3 the portion of the conduit **62** within the roller **54** is provided with a plurality of longitudinally and radially disposed apertures **72** through the wall of the conduit **62** along substantially the entire length of the conduit **62** between the end caps **56** and **58**.

As seen best in FIGURE 3, the paint reservoir and supply means **12** is further provided with an agitating means comprising one or more spherical steel balls **74** or the like which roll around the interior of the cylindrical casing **16** in response to the movement of the dispenser **10** thereby maintaining the paint within the cylinder between the piston **30** and the end wall **48**, in a properly blended condition. It will be understood, of course, that the spherical members **74** are of such size so as not to occlude or lodge in the aperture **44** and bore **64** of the valve means **50**.

As seen in FIGURE 5 an additional length of the conduit **63** may be threadedly secured to the body **51** of the valve means **50** and is accordingly provided at **65** with a coupling means for the reception of the conduit **62** thereby adapting the roller type paint dispenser **10** for the painting of ceilings or the like without requiring the utilization of the ladder.

In operation, the reservoir and supply means **12**, of the roller type paint dispenser **10**, is filled by threadably securing the fill pipe **48** on the threads **46** of the valve means **42**. The valve **42** is then opened and the end of the fill pipe **48** is placed below the surface of a suitable supply of paint such as indicated at **80**. The handle **29** of the piston plunger means **26** is then withdrawn thereby creating a partial vacuum within the reservoir and permitting atmospheric pressure to force the paint **80** up through the valve **42** and into the interior of the cylindrical body **16**. The shaft **28** of the plunger means **26** is then secured by locking the groove **36** in the keyhole slot **24** by moving the shaft downwardly into the reduced portion of the slot **24** thus placing the spring **34** under compression. The valve **42** is then closed and accordingly it may be seen that as soon as the shaft **28** of the piston plunger means **26** is released from the reduced portion of the keyhole slot **24** the spring **34** will urge the piston **30** toward the position shown in FIGURE 3 thereby pressurizing the contents of the reservoir **12**.

To supply paint to the interior of the roller **54** it is merely necessary to depress the lever **59** of the spring biased valve means **50** thereby urging the valve body **53** downwardly against the bias of the spring **55** thus permitting paint to flow from the reservoir **12** through the bore **64**, conduit **62** and outwardly through the apertures **72** into the interior of the roller thereby saturating the permeable sleeve **60**. The dispenser **10** is then rolled along in contact with the surface to be painted and the lever **59** of the valve means **50** is depressed periodically, or continuously, as may be required to maintain a sufficient amount of paint within the interior of the roller **54** to assure adequate coverage of the surface being painted. The apertures **72** are preferably of a constant diameter along the length of the conduit **62** within the interior of the roller **54** and are also of such size that they are not readily occluded by any congealed material which may pass through the conduit.

Although not shown, it will be understood that the napped fabric roller **60** may be replaced with any suitable roller covering as long as the covering is sufficiently permeable to permit reasonably free flow of the paint from the interior of the roller **54** outwardly therefrom.

As seen in FIGURE 5, if the device is to be utilized to paint a ceiling, for example, the extension **63** would be interposed between the valve means **50** and the conduit **62** thereby permitting the utilization of the dispenser **10** without the necessity of utilizing a ladder. It will be understood, of course, that the operation of the device shown in FIGURE 5 is substantially identical to the operation as described supra.

Upon completion of painting, the surplus paint in the reservoir **12** may be saved by draining the reservoir through the valve **42**, after which a garden hose, not shown, connected to a suitable source of water under line pressure, may be threadably secured to the threads **46** of the valve **42**. The shaft **28** is then locked in a rearward position by means of the slot **36** in the keyhole slot **24** and the handle **59** is secured in its depressed position by a suitable means such as a wire ring, not shown, thereby permitting water to flow into the reservoir **12** and then into the roller means **14** thereby thoroughly cleaning the dispenser **10**. It will be understood, of course, that this manner of cleansing has been described with regard to the utilization of water base paint, however, if oil base paints are utilized a suitable solvent other than water would be introduced through the valve **42** for the purpose of cleansing the dispenser **10**.

Accordingly, it may be seen that there has been provided a roller type paint dispenser or applicator which is simple in construction, relatively light in weight and which may be readily manipulated with one hand to roller paint a surface without the necessity of any cumbersome trailing paint supply lines or hoses.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described and accordingly any suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A roller paint applicator comprising an elongated hollow paint reservoir handle means having an end wall closure at one end, said end wall closure including independent first and second inlet and outlet conduit means mounted on said closure, said inlet and outlet conduits each being in independent and direct communication with the interior of said paint reservoir handle means, a first valve means interposed in said inlet conduit means and adapted to permit filling of said reservoir, pump means carried by said reservoir and adapted to pressurize the contents of said reservoir, a second value means interposed in said outlet conduit means and adapted to selectively release the pressurized paint contents of said reservoir through said outlet conduit, paint applicator roller support conduit means operatively associated with said second valve means, a generally porous paint applicator roller rotatably journaled about said paint applicator roller support conduit, and means placing the interior of said paint applicator roller support conduit in communication with the interior of said paint applicator roller.

2. A roller paint applicator comprising an elongated hollow paint reservoir handle means, said reservoir means including a cylindrical body member having a first and a second end, a cover removably and sealingly secured to one end of said body member, said cover being provided with means guiding a hand operated paint pressurizing pump means, the other end of said cylindrical body member being provided with a rigidly secured end wall, independent first and second inlet and outlet conduit means mounted on said end wall, said inlet and outlet conduits each being in independent and direct communication with the interior of said paint reservoir handle means an inlet valve means interposed in said inlet conduit means, a spring biased normally closed outlet valve means interposed in said outlet conduit means, a rigid paint applicator roller support conduit means operatively associated with said outlet valve means, said rigid paint roller support conduit rotatably supporting a paint roller applicator means thereon, said paint applicator roller conduit being provided with a plurality of apertures passing through the wall thereof and adapted to permit the introduction of paint into the interior of the roller applicator.

3. The structure of claim **2** wherein said inlet conduit means is further provided with a coupling means for removably securing a filling tube thereto.

4. The structure of claim **2** wherein said reservoir means includes a paint stirring means in the interior thereof, said paint stirring means comprising at least one spherical stirring ball.

5. The structure of claim **2** wherein said paint applicator roller means includes a cylindrical wire mesh roller, said wire mesh roller having a first and a second open end, imperforate end wall means rotatably journaling said wire mesh roller to said rigid paint roller support conduit, said journaling means comprising a pair of end plugs secured in sealing relationship in said ends of said wire mesh roller, and a permeable paint roller sleeve carried by said wire mesh roller and adapted to distribute the paint selectively released within said roller.

6. The structure of claim **2** wherein said paint pres-

surizing pump means includes a spring biased plunger means slidably mounted within said reservoir means and adapted to pressurize the contents of said reservoir.

7. The structure of claim 6 wherein said reservoir means is provided with a means of limiting travel of said pump plunger means, and said pump plunger means is provided with a detent means adapted to coact with said reservoir pump plunger detent means.

References Cited

UNITED STATES PATENTS

167,473	9/1875	Rodden	15—510
1,913,466	6/1933	Ackermans	15—559
2,357,763	9/1944	Pratt	15—562
2,722,029	11/1955	Barnes et al.	15—562
2,964,769	12/1960	Mercereau	15—562

ROBERT W. MICHELL, *Primary Examiner.*